



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,521	04/22/2004	Kunnath Sudhir	03-1046	7368
20306 7590 09/05/2007 MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606			EXAMINER LEE, BETTY E	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 09/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/829,521

Applicant(s)

SUDHIR ET AL.

Examiner

Betty Lee

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-7 and 12-18** are rejected under 35 U.S.C. 102(e) as being anticipated by Rezaiifar et al. (US 2004/0085951).

**Regarding claim 1**, Rezaiifar teaches a first network communication interface for connection to a first network (see Fig. 1 Box 102; The PDSN connects to a packet network.);

a second network communication interface for connection to a second network (see Fig. 1 Box 104); and

a protocol abstraction routine executable by a processing unit to identify if a data packet is associated with at least one of a first RP transfer protocol or a second RP transfer protocol (see paragraph 50 lines 1-8; The tunnel ID is used to distinguish between the GRE and L2TP protocols.), and to at least one of decapsulate or encapsulate the data packet according to the associated RP transfer protocol for transmission to one of the first network or the second network (see paragraph 64 lines 1-11).

**Regarding claim 2,** Rezaiifar further teaches the first RP transfer protocol is open-RP (see paragraph 50 lines 1-8; The open-RP transfer protocol uses GRE) and the second transfer protocol is closed-RP (see paragraph 52 lines 1-16; The closed-RP transfer protocol uses L2TP.).

**Regarding claim 3,** Rezaiifar teaches the first network is a radio access network and the second network is a packet network (see paragraph 64 lines 1-11).

**Regarding claim 4,** Rezaiifar teaches the packet network is the Internet (see paragraph 44 lines 1-2).

**Regarding claim 5,** Rezaiifar teaches if the data packet is for transmission to the radio access network, the protocol abstraction routine encapsulates the data packet for transmission, and if the data packet is for transmission to the packet network, the protocol abstraction routine decapsulates the data packet for transmission (see paragraph 64 lines 1-11).

**Regarding claim 6,** Rezaiifar teaches correlation-data stored in data storage, the correlation data defining parameters associate with an ongoing data session, where the parameter correspond to at least one of the first RP transfer protocol or the second RP transfer protocol (see paragraph 64 lines 1-11; The PPP link is associated with the IMSI of the mobile.).

**Regarding claim 7,** Rezaiifar further teaches the protocol abstraction routine is further arranged to simultaneously support a first data session using the first RP transfer protocol and a second data session using the second RP transfer protocol (see Fig. 1 and paragraph 52 lines 1-6; The tunnels use GRE and L2TP.).

**Regarding claim 12,** Rezaiifar teaches a first network communication interface for connection to a radio access network (see Fig. 1 Box 102; The PDSN connects to a packet network.);

a second network communication interface for connection to a packet network (see Fig. 1 Box 104);

a processing unit (see Fig. 1 Box 102; The PDSN contains a processing unit.);

data storage (see Fig. 1 Box 102; The PDSN contains data storage.);

correlation-data stored in the data storage, the correlation-data defining parameters associated with an ongoing data session, where the parameters correspond to at least one of a first RP transfer protocol or a second RP transfer protocol (see paragraph 64 lines 1-11; The PPP link is associated with the IMSI of the mobile.); and

a protocol abstraction routine stored in the data storage and executable by the processing unit to identify if a data packet received from a radio access network is associated with at least one of the first RP transfer protocol or the second RP transfer protocol (see paragraph 50 lines 1-8; The tunnel ID is used to distinguish between the GRE and L2TP protocols.) and to encapsulate the data packet according to the associated RP transfer protocol for transmission to one of the first network or the second network (see paragraph 64 lines 1-11).

**Regarding claim 13,** Rezaiifar further teaches the first RP transfer protocol is open-RP (see paragraph 50 lines 1-8; The open-RP transfer protocol uses GRE) and the second transfer protocol is closed-RP (see paragraph 52 lines 1-16; The closed-RP transfer protocol uses L2TP.).

**Regarding claim 14,** Rezaiifar further teaches the protocol abstraction routine is further arranged to simultaneously support a first data session using the first RP transfer protocol and a second data session using the second RP transfer protocol (see Fig. 1 and paragraph 52 lines 1-6; The tunnels use GRE and L2TP.).

**Regarding claim 15,** Rezaiifar teaches receiving a data packet from a first network (see paragraph 50 lines 1-8; The PDSN receives the data packet from an IP network.);

identifying if the data packet corresponds to at least one of a first RP transfer protocol (see paragraph 50 lines 1-8; The open-RP transfer protocol uses GRE.) or a second RP transfer protocol (see paragraph 52 lines 1-3; The closed-RP protocol uses L2TP.);

at least one of encapsulating or decapsulating the data packet according to the first RP transfer protocol when the data packet is associated with the first RP transfer protocol (see paragraph 51 lines 1-5; The packet is encapsulated using GRE.);

at least one of encapsulating or decapsulating the data packet according to the second RP transfer protocol when the data packet is associated with the second RP transfer protocol (see paragraph 52 lines 1-16; The data packet is encapsulated when using the L2TP protocol as the tunneling protocol.);

transmitting the packet to a second network (see paragraph 50 lines 1-8; The packet is transmitted to the RAN.);

**Regarding claim 16,** Rezaiifar further teaches the first RP transfer protocol is open-RP (see paragraph 50 lines 1-8; The open-RP transfer protocol uses GRE) and

the second transfer protocol is closed-RP (see paragraph 52 lines 1-16; The closed-RP transfer protocol uses L2TP.).

**Regarding claim 17**, Rezaiifar further teaches when the first network is a radio access network and the second network is a packet network the data packet is decapsulated (see paragraph 64 lines 1-11; The PDSN encapsulates the packet when it receives the packet from the IP and sends it to the RAN. Thus, The PDSN decapsulates the packet when it receives the packet from the RAN and sends it to the IP network.).

**Regarding claim 18**, Rezaiifar further teaches when the first network is a packet network and the second network is a radio access network the data packet is encapsulated (see paragraph 64 lines 1-11).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims **8-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rezaiifar et al. (US 2004/0085951) in view of Colban et al. (US 2005/0118946).
- Regarding claim 8**, Rezaiifar teaches a first network communication interface for connection to a radio access network (see Fig. 1 Box 102; The PDSN connects to a packet network.);
- a second network communication interface for connection to a packet network (see Fig. 1 Box 104);
- a processing unit (see Fig. 1 Box 102; The PDSN contains a processing unit.);
- data storage (see Fig. 1 Box 102; The PDSN contains data storage.);



correlation-data stored in the data storage, the correlation-data defining parameters associated with an ongoing data session, where the parameters correspond to at least one of a first RP transfer protocol or a second RP transfer protocol (see paragraph 64 lines 1-11; The PPP link is associated with the IMSI of the mobile.); and a protocol abstraction routine stored in the data storage and executable by the processing unit to identify if a data packet received from a radio access network is associated with at least one of the first RP transfer protocol or the second RP transfer protocol (see paragraph 50 lines 1-8; The tunnel ID is used to distinguish between the GRE and L2TP protocols.).

Rezaifar teaches all the subject matter of the claimed invention with the exception of decapsulating the data packet according to the associated RP transfer protocol for transmission of the data packet between the radio access network and a packet network using a protocol abstraction routine.

However, Colban teaches decapsulating the data packet according to the associated RP transfer protocol for transmission of the data packet between the radio access network and a packet network (see paragraph 65; The protocol abstraction technique removes the GRE header extension.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Colban in the system of Rezaifar. The motivation for doing so is to follow the industry standards for decapsulation of GRE packets.

**Regarding claim 9,** Rezaifar further teaches the protocol abstraction routine is further arranged to identify if a further data packet received from the packet network is

Art Unit: 2616

associated with at least one of the first RP transfer protocol or the second RP transfer protocol (see paragraph 64 lines 1-11; The GRE key is used to identify the packet as being associated with the GRE transfer protocol.), and to encapsulate the further data packet according to the associated RP transfer protocol for transmission of the further data packet between the packet network and the radio access network (see paragraph 64 lines 1-11; The PDSN encapsulates the data into a GRE tunnel.).

**Regarding claim 10**, Rezaiifar further teaches the first RP transfer protocol is open-RP (see paragraph 50 lines 1-8; The open-RP transfer protocol uses GRE) and the second transfer protocol is closed-RP (see paragraph 52 lines 1-16; The closed-RP transfer protocol uses L2TP.).

**Regarding claim 11**, Rezaiifar further teaches the protocol abstraction routine is further arranged to simultaneously support a first data session using the first RP transfer protocol and a second data session using the second RP transfer protocol (see Fig. 1 and paragraph 52 lines 1-6; The tunnels use GRE and L2TP.).

7. Claims **19 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rezaiifar et al. (US 2004/0085951) in view of Colban et al. (US 2005/0118946) and Nanji (US 2006/0193335).

**Regarding claim 19**, Rezaiifar teaches receiving a data packet from at least one of a radio access network or a packet network;

identifying if the data packet corresponds to at least one of a first RP transfer protocol or a second RP transfer protocol using a protocol abstraction routine (see paragraph 50 lines 1-8; The tunnel ID is used to distinguish between the GRE and L2TP protocols.);

decapsulating the data packet according to the first RP transfer protocol when the data packet is received from a radio access network and is associated with the first RP transfer protocol, for transmission to a packet network (see paragraph 64 lines 1-11; The PDSN encapsulates the packet when it receives the packet from the IP and sends it to the RAN. Thus, The PDSN decapsulates the packet when it receives the packet from the RAN and sends it to the IP network.);

decapsulating the data packet according to the second RP transfer protocol when the data packet is received from the radio access network and is associated with the second RP transfer protocol, for transmission to the packet network (see paragraph 64 lines 1-11; The PDSN encapsulates the packet when it receives the packet from the IP and sends it to the RAN. Thus, The PDSN decapsulates the packet when it receives the packet from the RAN and sends it to the IP network.);

encapsulating the data packet, using the protocol abstraction routine, according to the first RP transfer protocol when the data packet is received from the packet network and is associated with the first RP transfer protocol, for transmission to the radio access network (see paragraph 64 lines 1-11);

encapsulating the data packet according to the second RP transfer protocol when the data packet is received from the packet network and is associated with the

Art Unit: 2616

second RP transfer protocol, for transmission to the radio access network (see paragraph 52 lines 1-16; The data packet is encapsulated when using the L2TP protocol as the tunneling protocol.); and

transmitting at least one of a decapsulated packet to the packet network or an encapsulated data packet to the radio access network (see paragraph 64 lines 1-11).

Rezaiifar teaches all the subject matter of the claimed invention with the exception of using the protocol abstraction routine to decapsulate according to the first RP transfer protocol and to decapsulate and encapsulate according to the second RP transfer protocol.

However, Colban teaches decapsulating a packet according to the first GRE protocol using the protocol abstraction routine (see paragraph 65; The protocol abstraction technique removes the GRE header extension.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Colban in the system of Rezaiifar. The motivation for doing so is to follow the industry standards for decapsulation of GRE packets. Rezaiifar in view of Colban teaches all the subject matter of the claimed invention with the exception of encapsulating and decapsulating according to the second RP transfer protocol using a protocol abstraction routine.

However, Nanji teaches encapsulating and decapsulating according to the second RP transfer protocol using a protocol abstraction routine (see paragraph 28 lines 13-17 and paragraph 32 lines 7-15; The protocol abstraction routine adds a L2TP header for encapsulation and removes the L2TP header for decapsulation.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Nanji in

Art Unit: 2616

the system of Rezaiifar in view of Colban. The motivation for doing so is to follow the industry standards for encapsulation and decapsulation of L2TP packets.

**Regarding claim 20**, Rezaiifar further teaches the first RP transfer protocol is open-RP (see paragraph 50 lines 1-8; The open-RP transfer protocol uses GRE) and the second transfer protocol is closed-RP (see paragraph 52 lines 1-16; The closed-RP transfer protocol uses L2TP.).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gadgil et al. (US 2005/0159181), Nee et al. (US 6,947,416), Harper et al. (US 2005/0025132), Ma et al. (US 2006/0013240), and Li et al. (US 7,092,727) are all cited to show systems which are considered pertinent to the claimed invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betty Lee whose telephone number is (571) 270-1412. The examiner can normally be reached on Monday-Thursday 9-5 EST and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BL

A handwritten signature in black ink, appearing to read "Betty L.", with a long horizontal stroke extending to the right.